

CURRICULUM VITAE

Autobiography

Dr. Koji Abe is 57 years old man, and is currently Professor and Chairman of Neurology at Okayama University Medical School in Japan. He graduated Tohoku University School of Medicine (M.D.), and then got Ph.D. title from Tohoku University under direction of Professor Kyuya Kogure. Professor Koji Abe has been publishing more than 350 papers on cerebral blood flow and metabolism and neurodegenerative diseases. His research interests cover many important fields of neurology especially in the mechanism of ischemic brain damage, gene and stem cell therapy, neuroprotection, and neuroimaging. He is the past president of the International Society of Cerebral Blood Flow and Metabolism (CBFM), and is going to organize Japan-Asia CBFM meeting in Okayama city November 20-22 (2014) for which many Asian young scientists are welcome to join ! Check website at [2014, CBFM, Okayama]. <http://www2.convention.co.jp/26cbfm/>

Selected Papers

1. K. Abe, S. Yuki, and K. Kogure: A strong attenuation of ischemic and postischemic brain edema by a novel free radical scavenger. *Stroke* 19 (1988) 480-485
2. P.H. St. George-Hyslop,.... K. Abe,..and J. Hardy: Genetic linkage studies suggest that Alzheimer's disease is not a single homogeneous disorder. *Nature* 347 (1990) 194-197
3. M. Aoki, M. Ogasawara, Y. Matsubara, K. Narisawa, S. Nakamura, Y. Itoyama, and K. Abe: Mild ALS in Japan with a novel point mutation of Cu/ZnSOD gene. *Nature Genetics* 5 (1993) 323-324
4. K. Abe, M. Aoki, J. Kawagoe, T. Yoshida, A. Hattori, K. Kogure, and Y. Itoyama: Ischemic delayed neuronal death: A mitochondrial hypothesis. *Stroke* 26 (1995) 1478-1489
5. H. Kitagawa, C. Sasaki, K. Sakai, A. Mori, Y. Mitsumoto, T. Mori, Y. Fukuchi, Y. Setoguchi, and K. Abe: Adenovirus-mediated gene transfer of GDNF prevents ischemic brain injury after transient MCA occlusion in rats. *J. Cereb. Blood Flow Metabol.* 19 (1999) 1336-1344
6. K. Abe: Therapeutic potential of neurotrophic factors and neural stem cells against ischemic brain injury. *J. Cereb. Blood Flow Metabol.* 20 (2000) 1393-1408
7. M. Iwai, K. Sato, N. Omori, I. Nagano, Y. Manabe, M. Shoji, and K. Abe: Three steps of neural stem cells development in gerbil dentate gyrus after transient ischemia. *J. Cereb. Blood Flow Metabol.* 22 (2002) 411-419
8. T. Murakami, M. Shoji, Y. Imai, H. Inoue, T. Kawarabayashi, E. Matsubara, Y. Harigaya, A. Sasaki, R. Takahashi, and K. Abe , Pael-1 is accumulated in Lewy bodies of Parkinson's disease. *Ann. Neurol.* 55 (2004) 439-442
9. G. Jin, T. Hayashi, J. Kawagoe, T. Takizawa, T. Nagata, I. Nagano, M. Shoji, and K. Abe: Deficiency of PAR-2 gene increases acute focal ischemic barin injury. *J. Cereb. Blood Flow Metabol.* 25 (2005) 302-313
10. S. Nagotani,, T. Hayashi, K. Sato, WR. Zhang, K. Deguchi, I. Nagano, M Shoji, and K. Abe: Reduction of cerebral infarction in stroke-prone SHR by statins associated with amelioration of oxidative stress. *Stroke* 36 (2005) 670-672
11. T. Yamashita, M. Ninomiya, P. Hernandez Acosta, J. Manuel Garcia-Verdugo, T. Sunabori, M. Sakaguchi, K. Adachi, T. Kojima, Y. Hirota, T. Kawase, N. Araki, K. Abe, H. Okano, and K.

- Sawamoto, Subventricular zone-derived neuroblasts migrate and differentiate into mature neurons in the post-stroke adult striatum. *J. Neurosci.* 26 (2006) 6627-6636
12. Deguchi K, Tsuru K, Hayashi T, Takaishi M, Nagahara M, Nagotani S, Sehara Y, Jin G, Zhang H, Hayakawa S, Shoji M, Miyazaki M, Osaka A, Huh NH, Abe K.: Implantation of a new porous gelatin-siloxane hybrid into a brain lesion as a potential scaffold for tissue regeneration. *J Cereb Blood Flow Metab.* 26(2006) 1263-1273.
13. Sehara Y, Hayashi T, Deguchi K, Zhang H, Tsuchiya A, Yamashita T, Lukic V, Nagai M, Kamiya T, Abe K.: Decreased focal inflammatory response by G-CSF may improve stroke outcome after transient middle cerebral artery occlusion in rats. *J Neurosci Res.* 85 (2007) 2167-2174.
14. Ohta Y, Kamiya T, Nagai M, Nagata T, Morimoto N, Miyazaki K, Murakami T, Kurata T, Takehisa Y, Ikeda Y, Asoh S, Ohta S, Abe K.: Therapeutic benefits of intrathecal protein therapy in a mouse model of ALS. *J. Neurosci. Res.* 86 (2008) 3028-3037
15. Yamashita T, Kamiya T, Deguchi K, Inaba T, Zhang H, Shang J, Miyazaki K, Ohtsuka A, Katayama Y, Abe K.: Dissociation and protection of the neurovascular unit after thrombolysis and reperfusion in ischemic rat brain. *J Cereb Blood Flow Metab.* 29 (2009) 715-725
16. Yamashita T, Deguchi K, Nagotani S, Kamiya T, Abe K. Gene and stem cell therapy in ischemic stroke. *Cell Transplant.* 2009;18 : 999-1002.
17. Maruyama H, Morino H, Ito H, Izumi Y, Kato H, Watanabe Y, Kinoshita Y, Kamada M, Nodera H, Suzuki H, Komure O, Matsuura S, Kobatake K, Morimoto N, Abe K., Suzuki N, Aoki M, Kawata A, Hirai T, Kato T, Ogasawara K, Hirano A, Takumi T, Kusaka H, Hagiwara K, Kaji R, Kawakami H. Mutations of optineurin in ALS. *Nature* 2010; 465: 223-226.
18. Zhang X, Deguchi K, Yamashita T, Ohta Y, Shang J, Tian F, Liu N, Panin VL, Ikeda Y, Matsuura T, Abe K. Temporal and spatial differences of multiple protein expression in the ischemic penumbra after transient MCAO in rats. *Brain Res.* 2010;1343:143-152.
19. Kawai H, Yamashita T, Ohta Y, Deguchi K, Nagotani S, Zhang X, Ikeda Y, Matsuura T, Abe K. Tridermal tumorigenesis of induced pluripotent stem cells transplanted in ischemic brain. *J Cereb Blood Flow Metab.* 2010; 30: 1487-1493.
20. Lukic-Panin V, Deguchi K, Yamashita T, Shang J, Zhang X, Tian F, Liu N, Kawai H, Matsuura T, Abe K. Free radical scavenger edaravone administration protects against tissue plasminogen activator induced oxidative stress and blood brain barrier damage. *Curr Neurovasc Res.* 2010; 7: 319-329.
21. Tian F, Deguchi K, Yamashita T, Ohta Y, Morimoto N, Shang J, Zhang X, Liu N, Ikeda Y, Matsuura T, Abe K. In vivo imaging of autophagy in a mouse stroke model. *Autophagy.* 2010; 6: 1107-1114.
22. Liu N, Deguchi K, Shang J, Zhang X, Tian F, Yamashita T, Ohta Y, Ikeda Y, Matsuura T, Abe K. In vivo optical imaging of early-stage apoptosis in mouse brain after transient cerebral ischemia. *J Neurosci Res.* 2010; 88: 3488-3497.
23. Kawai H, Deguchi S, Deguchi K, Yamashita T, Ohta Y, Shang J, Tian F, Zhang X, Liu N, Liu W, Ikeda Y, Matsuura T, Abe K. Synergistic benefit of combined amlodipine plus atorvastatin on neuronal damage after stroke in Zucker metabolic rat. *Brain Res.* 2011; 1368: 317-323.
24. Shang J, Deguchi K, Ohta Y, Liu N, Zhang X, Tian F, Yamashita T, Ikeda Y, Matsuura T, Funakoshi H, Nakamura T, Abe K. Strong neurogenesis, angiogenesis, synaptogenesis, and antifibrosis of hepatocyte growth factor in rats brain after transient middle cerebral artery occlusion. *J Neurosci Res.* 2011; 89: 86-95.

25. Shang J, Liu N, Tanaka N, Abe K. Expressions of hypoxic stress sensor proteins after transient cerebral ischemia in mice. *J Neurosci Res.* 2011 Dec 20. doi:10.1002/jnr.22776. [Epub ahead of print]
26. Kurata T, Kametaka S, Ohta Y, Morimoto N, Deguchi S, Deguchi K, Ikeda Y, Takao Y, Ohta T, Manabe Y, Sato S, Abe K. PSP as distinguished from CBD, MSA-P and PD by clinical and imaging differences at an early stage. *Intern Med.* 2011;50(22):2775-81. Epub 2011 Nov 15.
27. Miyazaki K, Masamoto K, Morimoto N, Kurata T, Mimoto T, Obata T, Kanno I, Abe K. Early and progressive impairment of spinal blood flow-glucose metabolism coupling in motor neuron degeneration of ALS model mice. *J Cereb Blood Flow Metab.* 2011 Nov 9. doi: 10.1038/jcbfm.2011.155. [Epub ahead of print] PubMed
28. Kono S, Deguchi K, Morimoto N, Kurata T, Deguchi S, Yamashita T, Ikeda Y, Matsuura T, Narai H, Omori N, Manabe Y, Yunoki T, Takao Y, Kawata S, Kashihara K, Abe K. Tissue Plasminogen Activator Thrombolytic Therapy for Acute Ischemic Stroke in 4 Hospital Groups in Japan. *J Stroke Cerebrovasc Dis.* 2011 Oct 1. [Epub ahead of print] PubMed PMID: 21968092.
29. Kurata T, Miyazaki K, Kozuki M, Morimoto N, Ohta Y, Ikeda Y, Abe K. Progressive neurovascular disturbances in the cerebral cortex of Alzheimer's disease-model mice: protection by atorvastatin and pitavastatin. *Neuroscience.* 2011 Dec 1;197:358-68. Epub 2011 Sep 19. PubMed PMID: 21955601.
30. Deguchi K, Kono S, Deguchi S, Morimoto N, Ikeda M, Kurata T, Ikeda Y, Matsuura T, Kanbayashi T, Takahashi T, Abe K. A patient with anti-aquaporin 4 antibody presenting hypersomnolence as the initial symptom and symmetrical hypothalamic lesions. *J Neurol Sci.* 2012 Jan 15;312(1-2):18-20. Epub 2011 Sep 13. PubMed PMID: 21917270.
31. Yamashita T, Abe K. Therapeutic approaches to vascular protection in ischemic stroke. *Acta Med Okayama.* 2011 Aug;65(4):219-23. PubMed PMID: 21860527.
32. Ikeda M, Kawai Y, Mori K, Yano M, Abe K, Nishimura G, Dansako H, Ariumi Y, Wakita T, Yamamoto K, Kato N. Anti-ulcer agent teprenone inhibits hepatitis C virus replication: potential treatment for hepatitis C. *Liver Int.* 2011 Jul;31(6):871-80. doi: 10.1111/j.1478-3231.2011.02499.x. Epub 2011 Mar 13. PubMed PMID: 21645219.
33. Morimoto N, Deguchi K, Sato K, Yunoki T, Deguchi S, Ohta Y, Kurata T, Takao Y, Ikeda Y, Matsuura T, Abe K. Correlation of cerebral spinal fluid pH and HCO₃(-) with disease progression in ALS. *J Neurol Sci.* 2011 Aug 15;307(1-2):74-8. Epub 2011 May 31. PubMed PMID: 21632065.
34. Tian F, Morimoto N, Liu W, Ohta Y, Deguchi K, Miyazaki K, Abe K. In vivo optical imaging of motor neuron autophagy in a mouse model of amyotrophic lateral sclerosis. *Autophagy.* 2011 Sep;7(9):985-92. Epub 2011 Sep 1. PubMed PMID: 21628996.
35. Liu N, Shang J, Tian F, Nishi H, Abe K. In vivo optical imaging for evaluating the efficacy of edaravone after transient cerebral ischemia in mice. *Brain Res.* 2011 Jun 23;1397:66-75. Epub 2011 Apr 27. PubMed PMID: 21571257.
36. Zhang X, Deguchi S, Deguchi K, Ohta Y, Yamashita T, Shang J, Tian F, Liu N, Liu W, Ikeda Y, Matsuura T, Abe K. Amlodipine and atorvastatin exert protective and additive effects via antiapoptotic and antiautophagic mechanisms after transient middle cerebral artery occlusion in Zucker metabolic syndrome rats. *J Neurosci Res.* 2011 Aug;89(8):1228-34. doi: 10.1002/jnr.22633. Epub 2011 May 2. PubMed PMID: 21538457.
37. Ikeda Y, Nagai M, Kurata T, Yamashita T, Ohta Y, Nagotani S, Deguchi K, Takehisa Y, Shiro Y, Matsuura T, Abe K. Comparisons of acoustic function in SCA31 and other forms of ataxias. *Neurol Res.* 2011 May;33(4):427-32. PubMed PMID: 21535943.
38. Takamiya M, Miyamoto Y, Yamashita T, Deguchi K, Ohta Y, Ikeda Y, Matsuura T, Abe K. Neurological and pathological improvements of cerebral infarction in mice with platinum nanoparticles. *J Neurosci Res.* 2011 Jul;89(7):1125-33. doi: 10.1002/jnr.22622. Epub 2011 Mar 23. PubMed PMID: 21433052.

39. Kozuki M, Kurata T, Miyazaki K, Morimoto N, Ohta Y, Ikeda Y, Abe K. Atorvastatin and pitavastatin protect cerebellar Purkinje cells in AD model mice and preserve the cytokines MCP-1 and TNF- α . *Brain Res.* 2011 May 4;1388:32-8. Epub 2011 Mar 15. PubMed PMID: 21419111.
40. Miyazaki K, Ohta Y, Nagai M, Morimoto N, Kurata T, Takehisa Y, Ikeda Y, Matsuura T, Abe K. Disruption of neurovascular unit prior to motor neuron degeneration in amyotrophic lateral sclerosis. *J Neurosci Res.* 2011 May;89(5):718-28. doi: 10.1002/jnr.22594. Epub 2011 Feb 17. PubMed PMID: 21337372.
41. Kawai H, Deguchi S, Deguchi K, Yamashita T, Ohta Y, Omote Y, Kurata T, Ikeda Y, Matsuura T, Abe K. Protection against ischemic stroke damage by synergistic treatment with amlodipine plus atorvastatin in Zucker metabolic rat. *Brain Res.* 2011 Mar 25;1382:308-14. Epub 2011 Jan 26. PubMed PMID: 21276424.
42. Kobayashi H, Abe K, Matsuura T, Ikeda Y, Hitomi T, Akechi Y, Habu T, Liu W, Okuda H, Koizumi A. Expansion of intronic GGCCTG hexanucleotide repeat in NOP56 causes SCA36, a type of spinocerebellar ataxia accompanied by motor neuron involvement. *Am J Hum Genet.* 2011 Jul 15;89(1):121-30.
43. Abe K, Ikeda Y, Kurata T, Ohta Y, Manabe Y, Okamoto M, Takamatsu K, Ohta T, Takao Y, Shiro Y, Shoji M, Kamiya T, Kobayashi H, Koizumi A. Cognitive and affective impairments of a novel SCA/MND crossroad mutation Asidan. *Eur J Neurol.* 2012 Aug;19(8):1070-8.
44. Omote Y, Deguchi K, Tian F, Kawai H, Kurata T, Yamashita T, Ohta Y, Abe K. Clinical and pathological improvement in stroke-prone spontaneous hypertensive rats related to the pleiotropic effect of cilostazol. *Stroke.* 2012 Jun;43(6):1639-46.
45. Takamiya M, Miyamoto Y, Yamashita T, Deguchi K, Ohta Y, Abe K. Strong neuroprotection with a novel platinum nanoparticle against ischemic stroke- and tissue plasminogen activator-related brain damages in mice. *Neuroscience.* 2012 Sep 27;221:47-55.
46. Tian F, Yamashita T, Deguchi K, Omote Y, Kawai H, Ohta Y, Abe K. In vivo optical imaging correlates with improvement of cerebral ischemia treated by intravenous bone marrow stromal cells (BMSCs) and edaravone. *Neurol Res.* 2013 Dec;35(10):1051-8.
47. Liu W, Yamashita T, Tian F, Morimoto N, Ikeda Y, Deguchi K, Abe K. Mitochondrial fusion and fission proteins expression dynamically change in a murine model of amyotrophic lateral sclerosis. *Curr Neurovasc Res.* 2013 Aug;10(3):222-30.
48. Kono S, Deguchi K, Morimoto N, Kurata T, Yamashita T, Ikeda Y, Narai H, Manabe Y, Takao Y, Kawada S, Kashihara K, Takehisa Y, Inoue S, Kiriyama H, Abe K. Intravenous Thrombolysis with Neuroprotective Therapy by Edaravone for Ischemic Stroke Patients Older than 80 Years of Age. *J Stroke Cerebrovasc Dis.* 2013 Oct;22(7):1175-83.
49. Kono S, Deguchi K, Omote Y, Yunoki T, Yamashita T, Kurata T, Ikeda Y, Abe K. Reducing hemorrhagic complication by dabigatran via neurovascular protection after recanalization with tissue plasminogen activator in ischemic stroke of rat. *J Neurosci Res.* 2014 Jan;92(1):46-53.
50. Sun M, Yamashita T, Shang J, Liu N, Deguchi K, Liu W, Ikeda Y, Feng J, Abe K. Acceleration of TDP43 and FUS/TLS protein expressions in the preconditioned hippocampus following repeated transient ischemia. *J Neurosci Res.* 2014 Jan;92(1):54-63.